



VOSH PROGRAM DIRECTIVE: 12-102D

ISSUED: March 1, 2007

SUBJECT: Respiratory Protection Standard, § 1910.134, and Other Related Standards in Parts 1910 and 1926

A. Purpose.

CHANGE I: This change transmits to field personnel the revised and consolidated Respiratory Protection Standard, Parts 1910, 1915 and 1926. **CHANGE II:** This change corrects technical and typographic errors in the revised Respiratory Protection Standard which was published on April 23, 1998 (63 FR 20098). **CHANGE III:** OSHA withdrew its Tuberculosis proposed rule and revoked §1910.139, Respiratory Protection of M. Tuberculosis, and decided to re-apply §1910.134 for protection against Tuberculosis. **CHANGE IV:** This change provides employers with an additional fit-testing protocol to assist workers and employers in the proper fit and selection of respirators based on the conditions in the workplace. **CHANGE V:** This change transmits the Assigned Protection Factors (APF) rule which amends §1910.134(d)(3)(i)(A) of the Respiratory Protection Standard by specifying a set of APFs for each class of respirators; thereby, guiding employers in selecting the appropriate class of respirators needed to reduce hazardous exposures to acceptable levels to adequately protect employees.

NOTE to CHANGE IV: A Congressional rider to the fiscal year 2005 appropriations bill prohibits OSHA from inspecting or citing employers for the conduct of annual fit testing for occupational exposure to tuberculosis during FY 2005. This prohibition applies to all OSHA compliance inspections, including programmed inspections, employee complaints, and imminent danger situations. OSHA is to take no further action with regard to respiratory protection for occupational exposure to tuberculosis until the Centers for Disease Control and Prevention has completed the ongoing revisions of its tuberculosis guidelines.

No other provisions of the respiratory protection standard are affected by this appropriations restriction. OSHA may continue to cite annual fit testing requirements of 29 CFR 1910.134 as it relates to tuberculosis including the provisions of 29 CFR 1910.134(f)(2) for the lack of initial fit testing or whenever a different respirator facepiece is used.

This Program Directive is an internal guideline, not a statutory or regulatory rule, and is intended to provide instructions to VOSH personnel regarding internal operation of the Virginia Occupational Safety and Health Program and is solely for the benefit of the program. This document is not subject to the Virginia Register Act or the Administrative Process Act; it does not have general application and is not being enforced as having the force of law.

B. Scope.

This directive applies to all VOSH personnel.

C. References.

CHANGE I: 63 FR 1152 (January 8, 1998); Memorandum # 98-1 (January 14, 1998).
CHANGE II: 63 FR 20098 (April 23, 1998); Memorandum # 98-1A (May 15, 1998).
CHANGE III: 68 FR 75776 (December 31, 2003); Memorandum #04-01 (January 22, 2004).
CHANGE IV: 69 FR 46986 (August 4, 2004).
CHANGE V: 71 FR 50121 (August 24, 2006); Memorandum #06-04 (August 23, 2006).

D. Cancellation.

VOSH Program Directive 12-102C (March 1, 2005).

E. Action.

Directors and Managers shall ensure that the guidelines in this program directive are followed and that compliance officers are familiar with the contents of the standard.

F. Effective Dates.

CHANGE I: June 1, 1998.
CHANGE II: September 1, 1998.
CHANGE III: July 1, 2004.
CHANGE IV: March 15, 2005.
CHANGE V: March 21, 2007.

G. Expiration Date.

Not Applicable.

H. Background.

CHANGE I: The previous OSHA standards on respiratory protection were start-up standards adopted directly from the ANSI Z88.2-1969 standard, “Practices for Respiratory Protection” under section 6(a) of the OSH Act, 29 U.S.C. 655(a).

OSHA’s previous construction industry standard for respiratory protection, 29 CFR 1926.103, became applicable to the construction industry in February 1979. The Longshoring and Marine Terminals Standards have incorporated 29 CFR 1910.134 by reference. Section 29 CFR 1910.134 does not apply to agricultural workplaces, covered by 29 CFR part 1928.

On January 8, 1998, federal OSHA promulgated the Respiratory Protection Standard, §1910.134, at 63 FR 1152. The Safety and Health Codes Board then adopted the Respiratory Protection Standard, § 1910.134, and other related standards in parts 1910 and 1926, on February 9, 1998, with an effective date of June 1, 1998.

CHANGE II: Technical and typographic errors appearing in the Respiratory Protection Standard published on January 8, 1998 were adopted by the Safety and Health Codes Board on June 15, 1998,

with an effective date of September 1, 1998.

CHANGE III: On October 17, 1997, OSHA published a Proposed Rule on Occupational Exposure to Tuberculosis in which it made a preliminary determination that the significant risk incurring Tuberculosis infection while caring for patients and clients or performing certain procedures could be minimized or eliminated using infection prevention and control measures, including the use of respiratory protection when performing certain high-hazard procedures on infectious individuals. (68 FR 75776)

On January 8, 1998, OSHA revised its 1971 General Industry Standard for Respiratory Protection (63 FR 1152). Because the 1997 Tuberculosis proposal included all of the respiratory protection provisions that OSHA believed would be applicable to respirator use for Tuberculosis protection, it did not require this use to comply with the new §1910.134 during the rulemaking proceedings on the Tuberculosis proposal.

On December 31, 2003, federal OSHA published a notice in the *Federal Register* of its revocation of Respiratory Protection for M. Tuberculosis (29 CFR 1910.139) and of its application of the more protective General Industry Respiratory Protection Standard (29 CFR 1910.134) for respiratory protection against Tuberculosis, effective December 31, 2003. In a separate action also published on December 31, 2003, OSHA withdrew its proposed Tuberculosis standard because the risk of occupationally exposed workers had declined and, more specifically, OSHA believes that it is appropriate to defer to the Centers for Disease Control and Prevention (CDC) given its successful work in reducing the occupational risk of Tuberculosis infection.

On January 14, 2004, federal OSHA issued an announcement delaying for six months [until July 1, 2004] enforcing several provisions of the respiratory protection standard for establishments required to provide respirators for protection from potential exposure to Tuberculosis to give affected employers every opportunity to become familiar with the new respiratory protection requirements and successfully come into compliance. During the six-month phase-in period, OSHA would not cite the new requirements for establishments with workers exposed only to tuberculosis. All elements of the revoked rule continue to be enforced under the corresponding elements of the current respiratory protection standard. The federal delay does not affect establishments already covered under the respiratory protection rule where there is exposure to hazardous substances other than tuberculosis. All provisions of the rule will continue to be applied to those employers.

On April 21, 2004, the Safety and Health Codes Board adopted federal OSHA's changes and OSHA's six months' delay of the effective date. VOSH's original effective date of July 1, 2004, has been extended to December 31, 2004, for employers complying with additional requirements of §1910.134.

CHANGE IV: The Respiratory Protection Standard includes the following three quantitative fit testing protocols: Generated-aerosol; ambient-aerosol condensation nuclei counter; and controlled negative pressure (CNP). Part II of Appendix A of the Respiratory Protection Standard specifies, in part, the procedure individuals must follow to submit new fit testing protocols for OSHA's consideration. The criteria OSHA uses for determining whether to propose adding a fit testing protocol to the Respiratory Protection Standard include:

- (1) a test report prepared by an independent government research laboratory; or

- (2) an article published in a peer-reviewed industrial-hygiene journal describing the protocol and explaining how test data support the accuracy and reliability of the protocol. When the protocol meets one of these criteria, OSHA conducts a notice-and-comment rulemaking under Section 6(b)(7) of the Occupational Safety and Health Act of 1970 (29 U.S.C. 655). The CNP REDON protocol met the second of these criteria. (69 FR 46986)

On December 14, 2004, the Safety and Health Codes Board adopted federal OSHA's revisions with an effective date of March 15, 2005.

CHANGE V: When federal OSHA published the final Respiratory Protection Standard in January 1998, it noted that the revised standard was to "serve as a 'building block' standard with respect to future standards that may contain respiratory protection requirements" (63 FR 1265). OSHA's final Respiratory Protection Standard established the minimum elements of a comprehensive program that are necessary to ensure effective performance of a respirator. The only parts missing from this building block standard are the APF and MUC provisions that are being finalized in this rulemaking. (71 FR 50126-27)

Federal OSHA developed the final APFs after thoroughly reviewing the available literature, including chamber-simulation studies and workplace protection factor studies, comments submitted to the record, and hearing testimony. The studies OSHA analyzed were conducted on employees in actual workplaces who were performing their normal job duties. Consequently, the particle sizes, work rates, work times, and environmental conditions varied among these studies. OSHA concluded that using data collected under these various conditions presents a more accurate picture of workplace use of these respirators and is a better measure of the protection provided by half mask respirators than data collected only from other highly controlled studies.

Throughout the Respiratory Protection Standard rulemaking, federal OSHA emphasized that the Assigned Protection Factors (APF) and Maximum Use Concentrations (MUC) definitions and the APF table are an integral part of the overall standard.

On December 6, 2006, the Safety and Health Codes Board adopted federal OSHA's revisions with an effective date of March 21, 2007.

I. Summary.

CHANGE I: This revision applies to general industry, construction, shipyard, longshoring and marine terminal operations. It consolidates many of the respirator-related provisions in other substance-specific health standards into one standard to make these provisions easier for employers to administer.

Highlights of the respiratory protection standard include the following:

- ! The standard requires a written plan tailored to the specific needs of each worksite. Employers must conduct a hazard evaluation to characterize respiratory hazards and conditions of work;
- ! Employees must be trained, medically evaluated to determine their ability to wear respirators, and fit-tested if tight-fitting respirators are to be worn;

- ! Highly protective respirators are required in atmospheres that are immediately dangerous to life or health (IDLH), including during fire-fighting;
- ! Employers must periodically evaluate their respiratory protection program to ensure its continuing effectiveness;
- ! The use of the “2-in-2-out” rule (during interior firefighting in an IDLH atmosphere, self-contained breathing apparatus is required and at least two firefighters must enter and remain in visual and voice contact with each other at all times). Additionally, two firefighters must be on standby if two firefighters are engaged in interior structural firefighting in the burning building;

The revised standard deletes respiratory provisions in other OSHA health standards that duplicate those in the final standard, and revises other respirator-related provisions to make them consistent with the Respiratory Protection standard. It also contains four mandatory appendices and one non-mandatory appendix.

As a result of this revised standard, OSHA changed or removed a number of provisions that duplicated provisions now found in this respiratory protection standard.

CHANGE II: These amendments correct errors in the regulatory text of the Respiratory Protection final rule and related regulations which were originally published in the *Federal Register* on January 8, 1998 (63 FR 1152) and adopted by the Board on February 9, 1998.

The following corrections were made to § 1910.134:

1. In paragraphs (i)(1)(ii) and (i)(4)(ii), references to “Type 1-Grade D breathing air” was corrected to “Grade D breathing air: to conform to ANSI/CGA Commodity Specification for Air, G-7.1-1989.
2. In paragraph (n)(3), reference that previous federal standard is in effect until April 8, 1998 was changed to October 5, 1998. **Section 1910.134(n)(3) was corrected to state that provisions of §§ 1910.134 and 1926.103 (as revised and published in the Code of Federal Regulations--7/1/97) will remain in effect and are enforceable until 12/1/98 in Virginia or during any administrative or judicial stay of the provisions of this section.**
3. The following changes were made in Appendix A:
 - a. Bitrex Solution Aerosol qualitative Fit Test protocol: part numbers for the fit test hood assembly now match the part numbers given in the saccharin qualitative fit test protocol;
 - b. Generated Aerosol Quantitative Fit Test protocol: reference for using P100 filters as one of the methods to filter exhaust air flow from the fit test chamber was deleted because it was incorrect;
 - c. Condensation Nuclei Counter Negative Fit Test protocol: requirement in paragraph (a)(1) that a high-efficiency filter be fitted was revised to allow for the fit testing of additional

types of filters as appropriate; and

- d. Controlled Negative Fit Test protocol: pressure setting for default pressure test was changed from 1.5 mm to 15mm.
- 4. In Appendix C: Part A, Section 2, question 11(e) was corrected to read “d. Any other eye or vision problem: Yes/No”.
- 5. Appendix D is now mandatory since the employer is required by paragraph (k)(6) of § 1910.134 to provide information to employees who voluntarily use respirators.

Other standards amended:

- 1. In § 1910.1003(c)(4)(iv), 13 Carcinogens, requiring appropriate respirator filters for these carcinogens, language was added permitting the use of air-purifying canisters or cartridges, in addition to particulate filters, since some of the 13 carcinogens are vapors.
- 2. In § 1910.1025(f)(1)(i), Lead, the provision that limited respirator use to a maximum of 4.4 hours per day was removed. It was revised to read: “(i) Periods necessary to install or implement engineering or work-practice controls.”
- 3. In § 1910.1028(g)(2)(i), Benzene, the reference “(d)(3)(iii)(b)(1)” was corrected to read “(d)(3)(iii)(B)(1)”.
- 4. In § 1910.1045(h)(2)(i), Acrylonitrile, the reference “(d)(3)(iii)(b)(1)” was corrected to read “(d)(3)(iii)(B)(1)”.
- 5. In § 1910.1048(g)(2)(i), Formaldehyde, the reference “(d)(3)(iii)(b)(1)” was corrected to read “(d)(3)(iii)(B)(1)”.
- 6. In § 1910.1050, Methylenedianiline, following Table 1, paragraph 28 is revised to read “28. Section 1910.1050 is amended by removing Appendix E, Qualitative and Quantitative Fit Testing Procedures, and by revising paragraph (h) and the first paragraph of Section III to Appendix A.” These changes require the use of fit testing protocols in Appendix A of § 1910.134.
- 7. Section 1910.1052, Methylene chloride: The Methylene chloride (“MC”) standard limits respiratory protection to supplied-air respirators except for emergency escape. Section 1910.134(d)(3)(iii)(B)(1) and (2) address the use of end-of-service-life indicators or change schedules for cartridges and canisters, and do not apply to supplied-air or emergency escape respirators. These paragraphs were removed from the respiratory protection program required by the MC standard for compliance with the revised respiratory protection standard.
- 8. Section 1926.1101(h)(2)(iv), Asbestos, was corrected to reinstate an earlier revision permitting the use of PAPRs with HEPA filters or supplied-air respirators with HEPA egress cartridges under specified conditions.

CHANGE IV: Federal OSHA approved an additional quantitative fit testing protocol, the controlled negative pressure (CNP) REDON fit testing protocol, for inclusion in Appendix A of its Respiratory Protection Standard, §1910.134. The CNP REDON protocol will assess respirator fit effectively and also will train employees to detect leakage while donning and doffing a respirator. (69 FR 46989) The CNP REDON protocol is not expected to replace existing fit testing protocols, but instead is an alternative to them. Federal OSHA adopted its protocol under the provisions of the Respiratory Protection Standard that allow individuals to submit evidence for including additional fit testing protocols in this standard. (67 FR 46986)

The CNP REDON protocol requires the performance of three different test exercises followed by two redonnings of the respirator. The three test exercises, listed in order of administration, are normal breathing, bending over, and head shaking. (69 FR 46986) The CNP protocol previously approved by federal OSHA specifies eight test exercises, including one redonning of the respirator. In addition to amending the Respiratory Protection Standard to include the CNP REDON protocol, federal OSHA also made several editorial and non-substantive technical revisions to the standard associated with the CNP REDON protocol and the previously approved CNP protocol. The technical revisions include the following:

- A. Paragraph 14(a) of Part I.A in Appendix A of the Respiratory Protection Standard would exempt both the previously approved CNP protocol and the CNP REDON protocol from the test exercises specified for the other approved fit testing protocols listed in the appendix. OSHA deemed this revision necessary because the CNP REDON protocol consists of a test exercise procedure that differs substantially from the procedure required for the other OSHA-approved fit testing protocols. (69 FR 46987)
- B. In the introductory paragraph in Part I.A. of Appendix A, the outdated reference to the CNP instrument manufacturer as “Dynatech Nevada” was corrected to “Occupational Health Dynamics of Birmingham, Alabama” to accurately identify the current manufacturer of this instrument.
- C. Paragraph (c) of the previously approved CNP protocol under Part I.A.4 of the Respiratory Protection Standard was revised to include the screen tracing currently provided on the CNP test instrument as a visual warning device to detect test subjects’ non-compliance with the breath-hold procedure.
- D. In paragraph (a)(5) of the previously approved CNP protocol, the breath-hold requirement was corrected to 10 seconds from 20 seconds because implementing correct fit test procedures would improve the assessment of respirator fit factors using the previously approved CNP protocol as well as the new CNP REDON protocol. (*Id.*)

CHANGE V: Federal OSHA revised its existing Respiratory Protection Standard to add definitions and requirements for Assigned Protection Factors (APFs) and Maximum Use Concentrations (MUCs). The revisions also supersede the respirator selection provisions of existing substance-specific standards with these new APFs (except for the respirator selection provisions of the 1,3—Butadiene Standard). (71 FR 50122)

The APF final rule completes the revision of the reserve sections of OSHA’s Respiratory Protection

Standard as published in 1998. The Respiratory Protection program will now contain provisions necessary for a comprehensive plan, including selection and use of respiratory training, medical evaluation, and fit testing.

APFs are numbers that indicate the level of workplace respiratory protection that a respirator or class of respirators is expected to provide to employees when used as part of an effective respiratory protection program. An APF table is included in the final standard to guide employers in the selection of air-purifying, powered air-purifying, supplied-air (or airline respirator), and self-contained breathing apparatus (SCBA) respirators.

Federal OSHA amended §1910.134, respiratory protection, and the respirator selection provisions of these standards in general industry, construction, shipyards, longshoring and marine terminal workplaces.

The amended sections are in 1910 Subpart Z and are as follows:

1910.1001, asbestos	1910.1043, cotton dust
1910.1017, vinyl chloride	1910.1044, 1,2-dibromo-3-chloropropane
1910.1018, inorganic arsenic	1910.1045, acrylonitrile
1910.1025, lead	1910.1047, ethylene oxide
1910.1027, cadmium	1910.1048, formaldehyde
1910.1028, benzene	1910.1050, methylenedianiline
1910.1029, coke oven emissions	1910.1052, methylene chloride

OSHA also amended the following:

1915.1001, asbestos	1926.1101, asbestos
1926.60, methylenedianiline	1926.1127, cadmium
1926.62, lead	

C. Ray Davenport
Commissioner

Attachments:

CHANGE I. None. 63 FR 1152 (January 8, 1998), please refer to:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=FEDERAL_REGISTER&p_id=13749

CHANGE II. None. 63 FR 20098 (April 23, 1998), please refer to:
www.osha.gov/FedReg_oshapdf/FED19980423.pdf

CHANGE III: None. 68 FR 75776 (December 31, 2003) or refer to:
http://www.osha.gov/FedReg_oshapdf/FED20031231.pdf

CHANGE IV: None. 69 FR 46986 (August 4, 2004) or refer to:
http://www.osha.gov/FedReg_osha_pdf/FED20040804.pdf

CHANGE V: 71 FR 50121 (August 24, 2006) or refer to:
http://www.osha.gov/FedReg_osha_pdf/FED20060824.pdf

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**16 VAC 25-90-1910.134, Respiratory Protection Standard, § 1910.134, and Other Related Regulations,
Parts 1910 and 1926**

As adopted by the

Safety and Health Codes Board

CHANGE I: February 9, 1998

CHANGE II: June 15, 1998

CHANGE III: April 21, 2004

CHANGE IV: December 14, 2004



VIRGINIA OCCUPATIONAL SAFETY AND HEALTH PROGRAM

VIRGINIA DEPARTMENT OF LABOR AND INDUSTRY

Effective dates:

CHANGE I: June 1, 1998

CHANGE II: September 1, 1998

CHANGE III: July 1, 2004

December 31, 2004 (six-month delay of effective date)

CHANGE IV: March 15, 2005

16 VAC 25-90-1910.134, Respiratory Protection Standard, § 1910.134, and Other Related Regulations, Parts
1910 and 1926

**Assigned Protection Factors for Respirators,
Parts 1910, 1915 and 1926; Final Rule**

As Adopted by the
Safety and Health Codes Board

Date: December 6, 2006



VIRGINIA OCCUPATIONAL SAFETY AND HEALTH PROGRAM

VIRGINIA DEPARTMENT OF LABOR AND INDUSTRY

Effective Date: March 21, 2007

16 VAC 25-90-1910.134, Respiratory Protection;	16 VAC 25-90-1910.1045, Acrylonitrile;
16 VAC 25-90-1910.1001, Abestos;	16 VAC 25-90-1910.1047, Ethylene Oxide;
16 VAC 25-90-1910.1017, Vinyl Chloride;	16 VAC 25-90-1910.1048, Formaldehyde;
16 VAC 25-90-1910.1018, Inorganic Arsenic;	16 VAC 25-90-1910.1050, Methylenedianiline;
16 VAC 25-90-1910.1025, Lead;	16 VAC 25-90-1910.1052, Ethylene Chloride;
16 VAC 25-90-1910.1027, Cadmium;	16 VAC 25-100-1915.1001, Asbestos;
16 VAC 25-90-1910.1028, Benzene;	16 VAC 25-175-1926.60, Methylenedianiline;
16 VAC 25-90-1910.1029, Coke Oven Emissions;	16 VAC 25-175-1926.62, Lead
16 VAC 25-90-1910.1043, Cotton Dust;	16 VAC 25-175-1926.1101, Asbestos; and
16 VAC 25-90-1910.1044, 1,2-Dibromo- 3-chloropropane;	16 VAC 25-175-1926.1127, Cadmium

When the regulations, as set forth in the final rule for Assigned Protection Factors For Respirators, Parts 1910, 1915 and 1926, are applied to the Commissioner of the Department of Labor and Industry and/or to Virginia employers, the following federal terms shall be considered to read as below:

Federal Terms

VOSH Equivalent

29 CFR

VOSH Standard

Assistant Secretary

Commissioner of Labor and
Industry

Agency

Department

November 22, 2006

March 21, 2007